

A NEW GENUS AND SPECIES OF FLIGHTLESS CARABIDAE (COLEOPTERA) FROM FIJI

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Abstract

Vitagonum apterum gen. et sp. nov. is described from the island of Viti Levu, Fiji and is considered to represent a flightless relict of an ancient carabid fauna, now largely displaced by more modern, winged elements or their recent derivatives.

Introduction

During the compilation of a checklist of the carabid beetles known from the Fijian archipelago, which currently stands at 65 species (Moore, unpublished), it has become apparent that lightly built, fully winged and highly mobile species are dominant, indicating a predominantly recent fauna. However, one heavily sclerotised, flightless species, apparently confined to the main island of Viti Levu, is an obvious exception and is believed to represent a relict of an ancient fauna. This species, which is placed in the tribe Platynini and which shows some relationships with other Pacific island relicts of the tribe, is described below.

Vitagonum gen. nov.

(Figs 1-5)

Type species: *Vitagonum apterum* sp. nov.

A flightless genus of Platynini, with the following character states.

Head with one supraorbital seta beside each eye; palpi slender, glabrous; mentum (Fig. 2) broadly toothed and with 2 deep paramedian pits; antennae long, with 3 basal segments glabrous. Pronotum without marginal setae; prosternal process between coxae not very prominent but narrowly compressed and carinate, asetose. Elytra soldered along suture, with apices spinose; no discal pores; metepisterna elongate; hindwings reduced to a costal vein; legs long; tarsi slender, with the fourth segment weakly emarginate, scarcely bilobed; claws simple; protibiae with a well developed cleaning organ; male anterior tarsi scarcely dilatate, but 3 basal segments biserially squamose beneath. Aedeagus (Fig. 3) slender, well sclerotised; parameres conchoid, the left reduced; female stylomeres (Figs 4-5) short, stylomere-1 with a few fine setae, stylomere-2 with one stout spine on latero-basal surface (= ventral enciform seta).

The correct tribal placement of this new genus is not entirely clear, although most of its character states are in accord with those of the Platynini (= Agonini). Such states include the loss of supraorbital and pronotal marginal setae [which are frequent in flightless platynine stocks, notably in New Guinea (Darlington 1952)], the spinose elytral apices, the small, conchoid parameres and the presence of setae on stylomere-1 of the female

genitalia. However, the rather heavy build and, in particular, the compressed and carinate prosternal process, are more suggestive of the Sphodrini.

Valentine (1987) commented on the intermediate position of certain 'agonosphodrine', including his new genus *Bryanites*, with two species in Samoa, and he placed this genus, along with *Prospodrus* Britton (1959) of New Zealand and *Mexisphodrus* Barr (1965) of Mexico, in his new tribe Prospodrine, defined by the presence of a keeled prosternal process, in combination with conchoid parameres. However, and although he was unaware of *Bryanites*, Casale (1988), in his general revision of part of the Sphodrini, excluded *Prospodrus* and *Mexisphodrus* from this tribe and confidently placed them in the Platynini, on the basis of their male and female genitalic characters. Meanwhile, Barr (1981) had also transferred his *Mexisphodrus* from the Sphodrini to the Platynini.

I have not had an opportunity to study material of any of the genera included in Valentine's 'Prospodrine', but it is clear from published figures that they include very generalised carabids that, apart from loss of wings, show little of the secondary adaptation apparent in *Vitagonum*. Moreover, since the validity of the Prospodrine is perhaps still open to question, I prefer to retain *Vitagonum* as a platynine genus. However, in view of these uncertainties and the currently poorly understood internal relationships of the Platynini, it is scarcely possible to indicate a precise position for the new genus within this tribe.

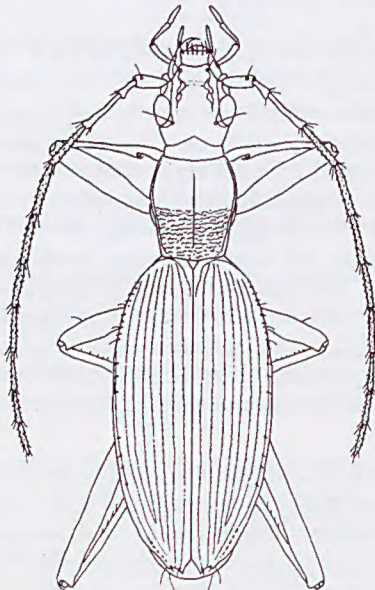


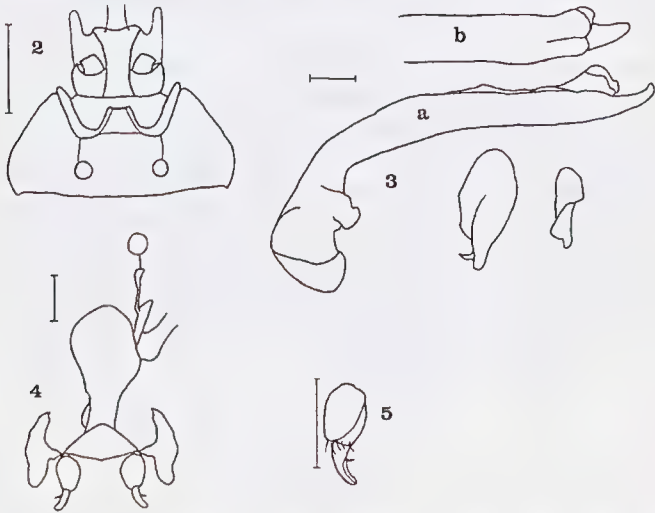
Fig. 1. *Vitagonum apterum* gen. et sp. nov., paratype male; natural length = 15 mm.

Vitagonum apterum sp. nov.

(Figs 1- 5)

Types. *Holotype* ♂, FIJI, VITI LEVU: Nadarivatu, 1000 m, under log, 17.ix.1938, Y. Kondo (Bernice P. Bishop Museum [BPBM], Honolulu). *Paratypes:* 9 ♂, 5 ♀, same data as holotype (BPBM; B. P. Moore Collection (CM), Canberra); 10 ♂, 8 ♀, Nadarivatu, Yoo Microwave Station, 1100 m, 16-23.viii.1978, S. & J. Peck (S. & J. Peck Collection, Ottawa; CM); one ♂, Nadarivatu, 25.ix.1950, B. A. O'Connor (Department of Agriculture Collection, Koronivia Research Station, Suva).

Description. Elongate, slender; largely dull black but femora, tarsi and antennomeres 2-11 piceous. Head elongate; neck pronounced; mandibles moderately long, acutely pointed; eyes moderately large and prominent; genae oblique; labrum transverse, 6-setose; tooth of mentum slightly bifid; frontal furrows broad, shallow, subparallel; antennae slender, reaching hind third of elytra in repose;. Pronotum fusiform, margined at sides, coarsely rugose in basal half; anterior angles closely applied to head; posterior angles rounded, not prominent. Elytra elongate-oval, fully striate; striae lightly crenulate; apices shortly dehiscent, bispinose. Abdomen smooth, segments 3-6 with 2 prominent setae about midline in male, terminal segment 4-setose in female; onychium sparsely setose beneath; median lobe of aedagus prominently recurved at apex (Fig. 3); no distinct armature in the internal sac. Length 13.5-14.5 mm; max. width 4.4-4.7 mm.



Figs 2-5. *Vitagonum apterum* gen. et sp. nov. (2), mentum and ligula; (3), aedeagus, (a), left lateral, with parameres detached, (b), dorsal; (4), female genitalia, ventral; (5), female right stylus, ventral, enlarged. Scale lines = 0.5 mm.

Comments. The type locality of Nadarivatu lies 15 km south of the central north coast of Viti Levu. Two specimens from 70 km south of Nadarivatu and 10 km north of the south coast (1 ♂, 1 ♀, not types, 10 km north of Galoa, 29.viii-1.ix.1978, S. & J. Peck, col. Peck), are a little smaller (length 12 mm) than those of the type series and of less slender build. The pronotum, in these specimens, is of a more lozenge-like shape (i.e. without the lateral sinuations of the type form), the elytra are more ovoid (especially in the female) and are more markedly punctato-striate, and the legs and antennae are shorter. The aedeagus of the male is even more slender than that of the holotype but otherwise of similar form.

These differences, even if sustained in larger series, can scarcely indicate anything more than local variation within a single species. However, in view of this evident variation, a single female from Colo North, Mt Victoria, 10.ix.1938, Y. Kondo (BPBM) has been excluded from the type series. Although it was evidently collected close to the type locality, it cannot be separated, morphologically, from the nomino-typical form.

Acknowledgments

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